

REMARKS/ARGUMENTS

Favorable reconsideration of this application as currently amended and in view of the following remarks is respectfully requested.

Claims 1-14 are pending. Claims 1, 3, 7-11, and 14 have been amended by the current amendment. No new matter has been added.

In the outstanding Official Action, Claims 1-4, 6-11, 13, and 14 were rejected under 35 USC 103(a) as being unpatentable over USP 5,699,121 to Zakhor et al. in view of U.S. 6,775,415 to Clausen et al.; and Claims 5 and 12 were rejected under 35 USC 103(a) as being unpatentable over Zakhor et al. in view of USP 5,805,737 to Abe.

Briefly recapitulating, the present invention (claim 1 as amended) is directed to an image encoding device including, among other things, conversion means for converting coding target blocks within a coding target image into conversion information; and encoding means for generating compression data by encoding quantized conversion information based on a plurality of sizes of blocks, and for generating a compression code used to generate the compression data for each block size. The encoding means *adopts the block size and compression code having a minimum bit rate among the plurality of generated compression codes. The block size and compression code corresponding to the lowest bit rate is included in header information.*

As a consequence of this configuration, the bit rate of compression data can be reduced as a compression code corresponding to an optimal block size for every coding target frame, and can be communicated via the header to the decoder. See the Specification, page 32, line 5 - page 33, line 1.

Claim 3 is directed to the analog encoding method of claim 1. Claim 7 is directed to a computer readable medium encoded with computer executable instructions for encoding an image according to the method of independent claim 3.

Claim 8 is directed to an image decoding apparatus including a decoding means for decoding block size information included in a header, and for generating quantized conversion information by decoding compression data including the compression code based on the decoded block size information. Claim 10 is directed to the analog decoding method of claim 8. Lastly, claim 14 is directed to a computer readable medium encoded with computer executable instructions for decoding an image according to the method of independent claim 10.

The official action asserts in section 2 of the office action that Zakhor teaches generating a compression code corresponding to each size of the blocks and states “Zakhor explains the patterns related to the different block sizes and finds the optimal pattern that corresponds to the lowest bit rate (col. 4, lines 50-58 and col. 5, lines 1-28).” Applicants respectfully traverse.

The Zakhor et al. patent discloses in column 4, lines 50-58 that, *in the prior art*, a DCT coder was known to process a motion residual signal which is segmented into blocks of data having a N x N size.¹ Col. 4, lines 59-61 of the Zakhor patent discloses that Zakhor does not use a DCT coder as described in col. 4, lines 50-58 of Zakhor. Instead, as acknowledged in the office action, Zakhor uses a pattern matcher.

The “optimal pattern” selected by Zakhor is based on a comparison of high energy regions of the motion residual signal and patterns stored in a library 80. See col. 5, lines 9-28 of Zakhor. In contrast to the present invention, Zakhor does not teach or suggest, for each of a plurality of block sizes, generating a compression code. In particular, there is no teaching or suggestion in Zokhor that the size of the seek blocks or the patterns stored in the library 80 are changed for purposes of selecting a compression code.

¹ In the prior art, the input matrix and the output matrix have the same size, for example, 8 x 8.

Column 6, lines 26-37 of Zakhor et al. discloses that the atom coder 100 performs known quantization and variable length coding operations. In particular, Zakhor et al. teach that the variable length coding is used to assign short bit patterns to signals with high probability of occurrence and longer bit patterns to signals with a lower probability of occurrence. In contrast to Zakhor et al., the present invention (claim 1) encodes the quantized conversion information based on the plurality of sizes of blocks, and generates a compression code corresponding to each size of the blocks. The block size and compression code corresponding to the lowest bid rate is included in header information. Because Zakhor et al. relies upon a pattern matching process in lieu of using a variable sized block based system, the Zakhor et al. patent fails to teach or suggest generating compression data including a compression code corresponding to the size of the blocks used during encoding.

Further, the official action acknowledges that the Zakhor et al. patent fails to teach or suggest transmitting in a header the block size and compression code corresponding to the lowest bit rate. Applicants agree. However, the official action further asserts that Claussen remedies this deficiency. Applicants respectfully traverse. Col. 15, lines 4-10 of Claussen disclose that the header of an image includes a minimum and maximum range block size and adaptive Huffman coded transform parameter information. However, as reflected by the inclusion of the maximum and minimum range block sizes, Claussen does not teach including in the header the block size, adopted from of a plurality of block sizes, corresponding to a lowest bit rate. Further, there is no teaching or suggestion in Claussen that the Huffman coded transform parameter information corresponds to an adopted block size.

Abe is relied upon in the Office Action for teaching a feature unrelated to the subject matter discussed above and is not believed to remedy the deficiencies of Zakhor et al.

Thus, Zakhor et al. are not believed to anticipate or render obvious the subject matter of the present invention (claims 1, 3, 7, 10, and 14) when considered alone or in combination

with the applied secondary references. The dependent claims are believed to be allowable for at least the same reasons that their respective independent claims are believed to be allowable.

In view of the present amendment and in light of the above discussions, it is believed that the outstanding rejection is overcome, and the application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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